

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

Claim 1 (currently amended): A method of predicting a displacement range of a wire harness, comprising the steps of:

designing a basic route of the wire harness;

fixing the wire harness at least two different fixing points on the basic route;

computing a displacement range of the wire harness between the fixing points, based on values of a length of the basic route between the fixing points including a dimensional tolerance, fixing positions and fixing directions of the wire harness at the fixing points, and a minimum bending radius of the wire harness, the computing step including the steps of:

computing two predictive routes which satisfy the values of the length of the basic route, the fixing positions, the fixing directions and the minimum bending radius, and the two predictive routes being respectively closest to the fixing points;

obtaining a plurality of computing points for computing the displacement range based on the predictive routes; and

computing outermost points of a plurality of predictive routes which satisfy the values of the route length, the fixing positions, the fixing directions and the minimum bending radius, at each of the plurality of computing points; and

displaying the displacement range of the wire harness in three dimensions by using the outermost points.

Claim 2 (currently amended): The method as set forth in claim 1, ~~wherein the computing step includes the steps of:~~

~~computing two predictive routes which satisfy the length of the basic route, the fixing positions, the fixing directions and the minimum bending radius, and the two predictive routes being respectively closest to the fixing points;~~

~~obtaining a plurality of computing points for computing the displacement range based on the predictive routes; and~~

~~computing outermost points of a plurality of predictive routes which satisfy the route length, the fixing positions, the fixing directions and the minimum bending radius, at each of the plurality of computing points; and~~

wherein the display step includes the steps of:

successively connecting the outermost points, which are close to each other; and

displaying the displacement range as lines connecting the outermost points.

Claim 3 (original): The method as set forth in claim 1, further comprising the steps of:
combining the computed displacement range with at least one of a shape of a fixing
portion and an interposition object; and
displaying the combined image in three dimensions.

Claim 4 (original): The method as set forth in claim 1, wherein the wire harness is
arranged on a door or a body of a vehicle.

Claim 5 (currently amended): A predicting device for predicting a displacement range of
a pre-designed basic route of a wire harness, comprising:

an input unit, inputting values of a length of the basic route including a dimensional
tolerance, fixing positions and fixing directions of the wire harness on at least two different
fixing points where the wire harness is fixed by fixing members, and a minimum bending radius
of the wire harness;

a displacement range computing unit, computing the displacement range of the wire
harness between the fixing members, based on the values of the length of the basic route, the
fixing positions, the fixing directions and the minimum bending radius, the displacement range
computing unit that computes two predictive routes which satisfy the values of the length of the
basic route, the fixing positions, the fixing directions and the minimum bending radius, and the
two predictive routes being respectively closest to the fixing points, the displacement range

computing unit that obtains a plurality of computing points for computing the displacement range based on the predictive routes, and the displacement range computing unit that computes outermost points of a plurality of predictive routes which satisfy the values of the route length, the fixing positions, the fixing directions and the minimum bending radius at each of the plurality of computing points; and

a display unit, displaying the displacement range in three dimensions by using the outermost points.

Claim 6 (currently amended): A predicting program for executing a method of predicting a displacement range of a wire harness used in a computer, said program comprising the steps of:

designing a basic route of the wire harness which is fixed at least two different fixing points on the basic route;

computing a displacement range of the wire harness between the fixing points, based on values of a length of the basic route between the fixing points including a dimensional tolerance, fixing positions and fixing directions of the wire harness at the fixing points, and a minimum bending radius of the wire harness, the computing step including the steps of:

computing two predictive routes which satisfy the values of the length of the basic route, the fixing positions, the fixing directions and the minimum bending radius, and the two predictive routes being respectively closest to the fixing points;

obtaining a plurality of computing points for computing the displacement range
based on the predictive routes; and

computing outermost points of a plurality of predictive routes which satisfy the
values of the route length, the fixing positions, the fixing directions and the minimum bending
radius, at each of the plurality of computing points; and

displaying the displacement range of the wire harness in three dimensions by using the
outermost points.

Claim 7 (currently amended): The predicting program as set forth in claim 6, wherein ~~the~~
~~computing step includes the steps of:~~

~~computing two predictive routes which satisfy the length of the basic route, the fixing~~
~~positions, the fixing directions and the minimum bending radius, and the two predictive routes~~
~~being respectively closest to the fixing points;~~

~~obtaining a plurality of computing points for computing the displacement range based on~~
~~the predictive routes; and~~

~~computing outermost points of a plurality of predictive routes which satisfy the route~~
~~length, the fixing positions, the fixing directions and the minimum bending radius, at each of the~~
~~plurality of computing points; and~~

~~wherein the display step includes the steps of:~~

~~successively connecting the outermost points, which are close to each other; and~~

displaying the displacement range as lines connecting the outermost points.

Claim 8 (original): The predicting program as set forth in claim 6, further comprising the steps of:

combining the computed displacement range with at least one of a shape of a fixing portion and an interposition object; and

displaying the combined image in three dimensions.